

Compossibility and Being in the Same World in Leibniz's Metaphysics

By

OLLI KOISTINEN/ARTO REPO (TURKU)

Zusammenfassung

In diesem Aufsatz wird das Problem der Inkommpossibilität bei Leibniz diskutiert. Zwei mögliche Substanzen sind inkommpossibel, wenn und nur wenn es nicht möglich ist, daß sie in einer gemeinsamen Welt existieren, d. h. es für Gott unmöglich ist, eine Welt zu erschaffen, in der beide Substanzen existieren. Der Begriff von Inkommpossibilität ist nun jedoch aufgrund der völligen Unabhängigkeit der Substanzen voneinander in Gefahr, sich als gehaltlos zu erweisen. Unser Ausgangspunkt im Folgenden ist Hintikkas Analyse des Problems. Wir versuchen zu zeigen, wie es für Leibniz möglich ist, in seiner Theorie der Individuation ohne Relationen auszukommen und sich auf sie dennoch zu stützen, um dem Begriff der Inkommpossibilität Gehalt zu verleihen. Dazu bedienen wir uns auch der Ideen von Russell über die Quelle der Inkommpossibilität bei Leibniz: Um ihre Herkunft aufzuspüren, müssen wir das Konzept von der Welt, welches Leibniz (gewöhnlich implizit) verwandt hat, noch beleuchten – unsere Lösung des Problems kann dann als eine Art Synthese der sogenannten analytischen und synthetischen Lösungen angesehen werden.

Introduction

In this paper, we consider a problem which arises in Leibniz's theory of individual substances. The problem is this: On the one hand, Leibniz wanted to deny the compossibility of all possible substances. He wanted to deny that it is possible that all possible substances exist in the same world. But on the other hand, he seemed to think that individual substances are independent of each other and this independence seems to entail the compossibility of all substances.

The plan of the paper is as follows. In the first section, we will consider the reasons for these seemingly opposite positions in Leibniz; i. e. why Leibniz wanted to deny the compossibility of all substances and why his theory of individuation was pushing him to grant possible co-existence to all conceivable substances. In the second section, we follow Fred D'Agostino in dividing the solutions to this problem into analytic and synthetic ones¹. As an analytic solution, we will consider Jaakko Hintikka's interpretation². According to

1 See F. D'Agostino: "Leibniz on Compossibility and Relational Predicates", in: R. S. Woolhouse (ed.): *Leibniz: Metaphysics and Philosophy of Science* (= *Oxford Readings in Philosophy*), Oxford 1981, pp. 89-103.

2 See J. Hintikka: "Leibniz, Plenitude, Relations and 'The Reign of Law'", in: *Ajatus* 31 (1969), pp. 117-144 (reprinted in H. G. Frankfurt (ed.): *Leibniz: A Collection of Critical Essays* (= *Modern Studies in Philosophy*), New York 1972, pp. 155-190).

Hintikka, Leibniz accepted relations at the logical level but denied them at the metaphysical level. The acceptance of relations in the individuation of substances makes impossibility possible. As an example of a synthetic solution, we consider Bertrand Russell's interpretation³. According to Russell, there are certain constraints any possible world has to meet, and even though no two substances can be internally impossible, not all possible substances together can meet the external constraints. In the third section, we present our solution. This solution is based on Hintikka's idea that somehow there are two levels in Leibniz's thinking about individuation. At the metaphysical level there are no relations, but relations arise when a combination of individual substances is thought to form a world. We also suggest that D'Agostino's distinction between analytic and synthetic interpretations is not so well-founded as it, at first sight, seems to be. In the concluding section, we argue that even if Leibniz was right in his view that not all substances are compossible, this would not save his system from Spinozism. It seems that Leibniz's idea of perfection requires that God should have created all possible worlds. Leibniz does not show why it can't be the case that all possible worlds exist together.

1. Impossibility and individuation

1.1. The need for impossibility

If all possible substances were compossible, i. e. could exist in the same world, Leibniz's God, it seems, should create them all because it follows from God's perfection that of all possible worlds he creates the richest, i. e. the one which contains most reality⁴. However, this would amount to Spinoza's doctrine that everything that is possible is actual, and Leibniz wanted to avoid such a view. In 1676, after discussions with Spinoza, Leibniz writes that 'many absurdities' would follow if we could not show that not all possibles per se can exist along with others:

"Nothing, however unreasonable, could be conceived which would not be in the world, not merely monsters but evil and wretched minds, and injustices, and there would be no reason for calling God good rather than evil, just rather than unjust. There would be some world in which all good people would be punished by eternal punishments, and all bad people rewarded, or wickedness expiated by happiness"⁵.

3 See B. Russell: *The Philosophy of Leibniz*, London 1937.

4 In this regard Leibniz belongs to the long tradition of thought in which being was understood to be somehow basically good. The papers in S. MacDonald (ed.): *Being and Goodness*, Ithaca 1991 give a good survey of the tradition.

5 A VI, 3, 581 (C 529-530); L. E. Loemker (ed.): *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, Dordrecht ²1969 (hereafter Loemker), p. 168: "[...] nihil tam ineptum fingi posset, quod non esset in mundo, non tantum monstra, sed et mentes malae et miserabiles, item injustitiae, et nulla esset ratio cur Deus diceretur bonus potius quam malus; justus quam injustus. Esset aliquis mundus in quo omnes probi poenis aeternis punirentur, et omnes improbi pensarentur, felicitate luerent scelus".

Thus, it is an important part of Leibniz's understanding of the relation of God to his creatures that there are mutually exclusive possible worlds, alternative ways the world could be, from which God chooses the best.

1.2. Internality of individuation

One of the doctrines about individual substances, accepted by Leibniz throughout his philosophical career, was that the principle of individuation of a substance has to be internal to it. In other words, what makes a certain substance the substance it is, cannot depend on any external facts, i. e. on how the substance is related to other things. Leibniz seems to accept this doctrine both in his early dissertation on the principle of individuation (“Disputatio metaphysica de principio individui”, 1663) and in his late commentary on Locke, *New Essays Concerning Human Understanding* (“Nouveaux essais”, 1703-1705), where the doctrine is expressed as follows:

“In addition to the difference of time or of place there must always be an internal *principle of distinction*: [...] although time and place (i. e. the relations to what lies outside) do distinguish for us things which we could not easily tell apart by reference to themselves alone, things are nevertheless distinguishable in themselves. So time and place do not constitute the core of identity and diversity [...]”⁶.

Soon after this, Theophilus, Leibniz's spokesman, identifies this principle of distinction with the principle of individuation⁷. The claim that the principle of individuation has to be internal to the thing is *prima facie* reasonable. It is true, of course, that quite often we identify things by relating them to other things: in using expressions like ‘the woman who is approaching me’ and ‘the car next to that one’, we are picking out individual things with the help of their relations to other things. However, when individuation is considered metaphysically, the situation seems different. The position that substances are individuated relationally seems absurd. Substances are things that *enter* into relations, and this seems to presuppose that they have their individuality somehow determinate before entering into these relations. In the quotation above, Leibniz

6 “Nouveaux essais” (NE) II, XXVII § 1; A VI, 6, 230 (GP V, 213); J. Bennett/P. Remnant (eds.): *G. W. Leibniz: New Essays Concerning Human Understanding* (= *Cambridge Texts in the History of Philosophy*), Cambridge 1996 (hereafter Bennett/Remnant), p. 230: “Il faut toujours qu’outre la difference du temps et du lieu, il y ait un *principe interne de distinction*, [...] quoique le temps et le lieu (c’est à dire le rapport au dehors) nous servent à distinguer les choses, que nous ne distinguons pas bien par elles mêmes, les choses ne laissent pas d’être distinguables en soi. Le precis de l’*identité* et de la *diversité* ne consiste donc pas dans le temps et dans le lieu [...]”. For Leibniz’s early theory of individuation and the internality-principle, see the discussion of “Disputatio metaphysica de principio individui” in L. B. McCullough: *Leibniz on Individuals and Individuation* (= *Philosophical Studies in Contemporary Culture*, vol. 3), Dordrecht 1996, p. 30.

7 See NE II, XXVII § 3; A VI, 6, 230-231 (GP V, 213-214); Bennett/Remnant, pp. 230-231. The term ‘principle of individuation’ was in common use in Scholastic metaphysics.

clearly distinguishes the epistemological question about how we identify things from the metaphysical question about what makes individuals the individuals they are.

Leibniz's idea about the internality of individuation can, then, be expressed as follows:

The individuation of a substance does not depend on its relations to other individuals but is dependent only on its internal features.

The internality of individuation leads to difficult questions. Does it mean that any two substances have to be intrinsically distinguishable, i. e. is it the case that there has to be something in the one that is not in the other? It seems, however, possible that there are two *qualitatively* indistinguishable substances, and then the question is: 'What else besides these qualitative features could there be in the one but not in the other?' Leibniz's answer to the question about the ground of individuation in qualitatively identical, or indiscernible, substances is radical and simple. There can be no such ground, so there can be no such substances. This is expressed in the famous principle of the identity of indiscernibles, one formulation of which is: "*there cannot be two individual things in nature which differ only numerically*"⁸. Numerical difference is always accompanied by some qualitative difference.

In "The Discourse on Metaphysics", Leibniz develops his complete concept theory of individual substances. In this theory, every individual substance is understood as an instantiation of some complete individual concept. Any com-

8 A VI, 4 B, 1645 (C, 519); Loemker, p. 268. The passage continues in an interesting way: "For surely it must be possible to give a reason why they are different, and this must be sought in some differences within themselves". This suggests that there is a connection between the principle of identity of indiscernibles and the principle of sufficient reason. The passage in the original text is as follows: "[Sequitur etiam hinc] *non dari posse in natura duas res singulares solo numero differentes. Utique enim oportet rationem reddi posse cur sint diversae, quae ex aliqua in ipsis differentia petenda est*" (ibid.).

9 See "The Discourse on Metaphysics" ("Discours de métaphysique"; DM) VIII; A VI, 4 B, 1540 (GP IV, 433); Loemker, p. 307. In a letter to Arnauld, Leibniz (GP II, 54; H. T. Mason (ed.): *The Leibniz – Arnauld Correspondence*, Manchester 1967 (hereafter Mason), pp. 60-61) explains: "[...] in speaking of many Adams, I was not considering Adam as a determinate individual, but as a certain person conceived of in general terms in circumstances which seem to us to determine Adam as an individual, but which in truth do not determine him sufficiently [...]. But all that is not sufficiently determining, and in this way there would be many disjunctively possible Adams or many individuals whom all that would fit. [...] what determines a certain Adam must absolutely contain all his predicates, and it is this complete concept that determines generality in such a way that the individual is reached". The original text in GP II, 54 is as follows: "[...] en parlent de plusieurs Adams, je ne prenois pas Adam pour un individu déterminé, mais pour quelque personne conçue *sub ratione generalitatis* sous des circonstances qui nous paroissent déterminer Adam à un individu, mais qui véritablement ne le déterminent pas assez [...]. Mais tout cela ne détermine pas assez, et il y auroit ainsi plusieurs Adams disjunctivement possibles ou plusieurs individus à qui tout cela conviendrait. [...] mais ce qui détermine

plete concept is rich enough to determine exactly one possible substance⁹. The most obvious way in which the internality of individuation is connected with the complete concept theory of substances is that it seems to require that the complete concepts of individual substances are at the basic level definable without relational predicates. This is so because according to this theory the complete concept of a substance has a close connection to the individuality of the substance: if it is asked what it means to be a particular individual, the answer is that to be a particular individual is to be an instantiation of a particular complete concept. If the complete concept of a substance involves relations (relational predicates), it follows that this substance is partly individuated by its relations to other things; and this seems to mean that it cannot exist without being related to these other things. When Leibniz describes the complete concepts of substances, he comes close to including relational predicates in them. Sometimes he says that *everything* true of an individual is part of its complete concept, and this seems to mean that relational predicates are also included in the complete concept¹⁰. In the definition of individual substance in “The Discourse on Metaphysics”, Leibniz’s view is this:

“[...] we can say it is the nature of an individual substance or complete being to have a concept so complete that it is sufficient to make us understand and deduce from it all the predicates of the subject to which the concept is attributed”¹¹.

If ‘all the predicates’ includes relational predicates as well as monadic ones, it seems that the relations of the individual are at least implicitly in its complete concept, and this is already a threat to the internality of individuation. But on the other hand, it could be argued that in his definition of individual substances, Leibniz wants to save the internality of individuation by saying that the complete concept itself does not need to involve everything true of the substance it is attributed to. It is enough that everything can be *deduced* from this complete concept, possibly with the help of some metaphysical principles or decrees of God concerning the laws of the world in which the substance exists. If some core concept, which involves no relational predicates and which fixes the identity of an individual, can be found, then it can be said that *at some*

un certain Adam doit enfermer absolument tous ses predicats, et c’est cette notion complete qui determine *rationem generalitatis ad individuum*”.

10 See especially Leibniz’s letter to Arnauld (4/14 July 1686). In this letter, Leibniz (GP II, 54; Mason, p. 61) gives perhaps the most eloquent descriptions of the *world-boundedness* of substances, i. e. of the idea that the creation of one substance means creating the whole world around it. Leibniz also says this: “[...] what determines a certain Adam must absolutely contain all his predicates, and it is this complete concept that determines generality in such a way that the individual is reached” (see note 9).

11 DM VIII; A VI, 4 B, 1540 (GP IV, 433); Loemker, p. 307: “[Cela estant,] nous pouvons dire que la nature d’une substance individuelle, ou d’un Estre complet, est d’avoir une notion si accomplie, qu’elle soit suffisante, à comprendre et à en faire deduire tous les predicats du sujet à qui cette notion est attribuée.

fundamental level individuation is internal.

Leibniz's hesitation here seems to be a sign of a deeper dilemma: on the one hand, he accepts the internality of individuation which excludes relations, but on the other hand, he needs relations in order to explain impossibility, i. e. the fact that some possible substances can be in each other's way so that even for the omnipotent God it is not possible to create all possible substances. Two material things can get in each other's way because of the principle that two material things cannot exist at the same place at the same time, but no such explanation is possible for the impossibility of Leibnizian substances. In fact, one of the reasons why Leibniz thinks that substances are minds is that minds "least obstruct each other"¹². The problem now is that in this way one might end up accepting a theory of substances in which substances cannot obstruct each other at all, i. e. there would be no substances impossible with each other. This would mean, because it is in God's nature to create the richest possible world, that every possible substance would be actual. Thus, the following description of actual and possible universes, given by Leibniz in a letter to Bourguet, would collapse:

"Thus the universe is a collection of certain order of compossibles only, and the actual universe is a collection of all the possibles which exist, that is to say, those which form the richest composite. And since there are different combinations of possibilities, some of them better than others, there are many possible universes, each collection of compossibles making up one of them"¹³.

But how can there be impossibility? Hintikka has given a clear account of the situation. Let C_1 and C_2 be the complete concepts of two possible substances. This means that

$$(1) \quad \Diamond \exists x C_1 x,$$

and

$$(2) \quad \Diamond \exists x C_2 x$$

are true. In other words, there is a possible world where C_1 is instantiated, and there is a possible world where C_2 is instantiated. Let us now suppose that the possible individuals in question are impossible. It should, then, be the case that

$$(3) \quad \neg \Diamond (\exists x C_1 x \wedge \exists x C_2 x).$$

Hintikka points out that this is not possible if C_1 and C_2 do not include relational predicates. If they include only monadic predicates, then if (1) and (2)

12 DM V; A VI, 4 B, 1536 (GP IV, 430); Loemker, p. 306: "[les esprits] qui s'empêchent le moins".

13 GP III, 573; Loemker, p. 662: "Ainsi l'Univers n'est que la collection d'une certaine façon de compossibles; et l'Univers actuel est la collection de tous les possibles existants, c'est à dire de ceux qui forment le plus riche composé. Et comme il y a de différentes combinaisons des possibles, les unes meilleures que les autres, il y a de plusieurs Univers possibles, chaque collection de compossibles en faisant un".

are true, then it is also true that

$$(4) \quad \Diamond(\exists xC_1x \wedge \exists xC_2x).$$

Intuitively, this is because if there is a possible world where C_1 is instantiated and a possible world where C_2 is instantiated, and if the instantiations of C_1 and C_2 do not have any implications outside the things which instantiate them, i. e. if C_1 and C_2 only require for their instantiation that there be substances with certain internal properties, then the two worlds where C_1 and C_2 respectively get instantiated can be fused together so that we get a world in which (4) is true. Without relational predicates, it seems, there is no way to explain how substances can get in each other's way. Hintikka writes:

"Thus Leibniz' distinction [between possibility and compossibility] is without difference as long as relational concepts are not employed. This is a striking result in view of the often repeated claim that Leibniz wanted to dispense with relations in the last analysis, and to reduce them to non-relational concepts. If this were the case, Leibniz's system would be inconsistent in an ironic manner"¹⁴.

2. Analytic and synthetic solutions to the problem of impossibility

2.1. Analytic solutions to the problem of impossibility: Hintikka

Interpretations, in which the impossibility of substances is understood as logical incompatibility of their complete individual concepts, have been termed "analytical" by D'Agostino¹⁵. At first blush, analytic interpretations seem natural because it is difficult to see what else but incompatibility between complete concepts could prevent an all-powerful God from creating them into the same world. Hintikka's conclusion from the above analysis is that Leibniz has to accept relational concepts as components of complete individual concepts. Hintikka argues that for Leibniz the reducibility of relations means only that relational statements can be reduced to statements in which a complex predicate, which may still be relational, is ascribed to 'one and only one' of the relata of the original statement¹⁶. By accepting relational concepts, it becomes possible to understand how the existence of a substance can logically exclude the existence of some other substance. What seems to follow from this is that the individuation of substances is not intrinsic after all: if a possible substance could be identified by God without any reference to other substances, impossibility would be an impossibility. What a thing is, has to depend on how it is related to other things. Substances are bounded into their worlds. Benson

14 Hintikka (see note 2), pp. 121-122.

15 D'Agostino (see note 1), p. 93.

16 See Hintikka (see note 2), p. 126.

Mates accepts this conclusion, too. Mates says that Leibniz “gave up the traditional conception of substance” as something which “does not depend for its existence on the existence of anything else”¹⁷.

The analytic interpretation, however, does not require that the complete concept of a substance contains relational predicates with singular terms in them. For Hintikka¹⁸, Leibniz's apparent denial of relations means that the relational statements in which several singular terms occur can be analyzed into eo ipso-statements in which there are no relational predicates with several singular terms. If we consider a sentence like ‘Paris loves Helen’, it seems as if the complete concept of Paris should involve the relational predicate ‘x loves Helen’. Instead, if the sentence in question is analyzed into ‘Paris is a lover, and eo ipso Helen is loved’, then the relational predicate which is connected directly to Paris is, $\exists y(x \text{ loves } y)$, which no more involves any singular terms. This seems right, because it frees us from the odd view that the individuation of any substance presupposes the individuation of all the others.

As we said above, there is textual evidence for an interpretation in which the complete concepts of substances are taken to involve relational predicates. In Leibniz's letters to Arnauld, there are many passages where the world-boundedness of individual substances is emphasized. Hintikka himself refers to the following passage from “Nouveaux essais”¹⁹:

“But there is no term which is so absolute or so detached that it does not involve relations and is not such that a complete analysis of it would lead to other things and indeed to all other things”²⁰.

In this paper, we do not want to question the world-boundedness of substances. What remains in doubt, however, is whether it is possible to combine the world-boundedness of substances with the internality of individuation. Hintikka's analysis shows that world-boundedness requires that the complete concepts of substances involve relational predicates. Prima facie this means the rejection of the internality of individuation.

Let us look at the following passage where the importance of relational predicates for the individuation of substances and the world-boundedness of substances seem to be expressed:

[...] God, seeing Alexander's individual notion or haecceity, sees in it at the same time the basis and reason for all the predicates which can be said truly of him, for example, that he vanquished Darius and Porus; [...] we can say that from all time in Alexander's soul there are

17 B. Mates: *The Philosophy of Leibniz*, Oxford 1989, p. 192. A recent interpretation of Leibniz, where the world-boundedness of substances seems to be rejected, is J. Cover/J. O'Leary-Hawthorne: *Substance and Individuation in Leibniz*, Cambridge 1999.

18 See Hintikka (see note 2), p. 123.

19 See *ibid.*, p. 125.

20 NE II, XXV § 10; A VI, 6, 228 (GP V, 211); Bennett/Remnant, p. 228: “Autrement il n'y a point de terme si absolu ou si détaché, qu'il n'enferme des relations, et dont la parfaite analyse ne mène à d'autres choses et même à toutes les autres [...]”.

vestiges of everything that has happened to him and marks of everything that will happen to him and even traces of everything that happens in the universe, even though God alone could recognize them all”²¹.

In this passage, Leibniz does not clearly say that relational predicates are included in the complete concept of an individual, but he clearly says that they are derivable from it (they have their ‘basis and reason’ in it). This would be enough for there to be logical incompatibilities between complete concepts²². Would this open a way to combine the internality of individuation with world-boundedness? There would be two levels in which individuation can be considered: a more fundamental level where relations do not appear, and another level which allows relations. As Hintikka says, the idea that simple properties of substances are necessarily connected with their relational properties seems to be Leibniz’s way of keeping “his relational cake as a logician and scientist while eating it as a metaphysician”²³! The problem is, how can Leibniz do this? How is it possible that the relational predicates can be derived from a description which involves only non-relational monadic predicates? By using the concepts of monadology we could express the problem as follows²⁴. The basic states of substances, for Leibniz, are perceptions. But how is it possible to derive the fact that there is such-and-such a world around it from the fact that some monad is such that it appears to it that there is such-and-such a world around it? How is it possible to derive the nature of the universe around a substance from the inner traces in it? It seems to us that Hintikka is right that in some way Leibniz both denied and accepted the existence of relations. In our interpretation, which is based on Hintikka’s suggestion, we try to show how this initially paradoxical position can be upheld. However, before giving our suggestion, we will consider Russell’s solution to the problem of impossibility.

21 DM VIII; A VI, 4 B, 1540-1541 (GP IV, 433); *Gottfried Wilhelm Leibniz: Philosophical Essays*, trans. by R. Ariew and D. Garber, Indianapolis – Cambridge 1989 (hereafter Ariew/Garber), p. 41; Loemker, p. 308: “Dieu voyant la notion individuelle ou hecécité d’Alexandre, y voit en même temps le fondement et la raison de tous les predicats qui se peuvent dire de luy veritablement, comme par exemple qu’il vaincroit Darius et Porus, [...] on peut dire qu’il y a de tout temps dans l’ame d’Alexandre des restes de tout ce qui luy est arrivé, et les marques de tout ce qui luy arrivera, et même des traces de tout ce qui [se] passe dans l’univers, quoyqu’il n’appartienne qu’à Dieu de les reconnoistre toutes”.

22 Hintikka expresses this as follows: “Granting the reduction [...] of relational propositions to subject-predicate propositions with a possibly complex predicate containing relations, does it matter much if these relational predicates are reduced further to simple monadic predicates? If these simple properties are *somehow necessarily connected* with those complex relational properties (complex monadic predicates) which reduce to them, the reduction makes little difference to the logic of the situation [...]” (Hintikka (see note 2), p. 127, emphasis ours).

23 *Ibid.*, p. 127.

24 It should be emphasized that we do not claim that Leibniz, at the time of writing “The Discourse on Metaphysics” (1686), was committed to all the assumptions he later makes in his “Monadology”. What we want to say is that this problem can also be presented in the terminology of monadology. We are grateful to an anonymous referee for pointing us that it is by no means clear that monadology was implicit in the theory of “The Discourse on Metaphysics”.

2.2. Synthetic solutions to the problem of impossibility: Russell

Some interpreters have tried to find constraints for possible worlds which are not grounded upon incompatibilities between complete concepts. This leads to what D'Agostino has called a synthetic solution to the problem of impossibility. He gives the following account of the difference between the analytic and synthetic solutions:

"An analytic solution would show how it would be logically impossible for two substances to be part of the same possible world. A synthetic solution, on the other hand, would show how two substances could not belong to the same possible world without violating some synthetic law governing the arrangement of substances in that world – and could not do so despite the logical compatibility of the complete individual concepts by which they are represented"²⁵.

Russell was one of the earlier proponents of the synthetic interpretation. Russell notes that Leibniz had difficulties in explaining the notion of impossibility because he thought that there are no necessary connections between any "separate contingent predicate[s]" of substances, and from this it seems to follow that "any collection of possible existents must be compossible, since their coexistence cannot be self-contradictory"²⁶. Russell argues that Leibniz can evade this conclusion by introducing the requirement that all possible worlds must have general laws. This requirement is, according to Russell, based ultimately upon the principle of sufficient reason. It follows from this requirement that "many series of existents", i. e. many combinations of possible substances, fail to be metaphysically possible because they would constitute a world without any general order: "Possibles cease to be compossible only when there is no general law whatever to which both conform"²⁷. Russell says of this "reign of law" that it is metaphysically necessary and that without it "compossibility must remain unintelligible"²⁸.

One criticism of Russell's solution is that it does not save impossibility from being an empty notion. Gregory Brown formulates this criticism by saying that "by Leibniz's lights, *any* combination of individual concepts should determine a possible world whose phenomena can be described by some set of general laws"²⁹.

Brown refers to the following passage from "The Discourse on Metaphysics":

"So true is this that not only does nothing happen in the world which is absolutely irregular but one cannot even imagine such an event. For let us assume that someone puts down a number of

25 D'Agostino (see note 1), p. 94.

26 Russell (see note 3), p. 67.

27 Ibid., p. 67.

28 Ibid., p. 67.

29 G. Brown: "Compossibility, Harmony, and Perfection in Leibniz", in: *The Philosophical Review* XCVI/2 (1987), pp. 173-203, p. 179.

points on paper entirely at random [...]; I maintain that it is possible to find a geometric line whose law is constant and uniform and follows a certain rule which will pass through all these points and in the same order in which they are drawn”³⁰.

This seems to mean that Leibniz’s concept of order is such that it is impossible to combine possible substances in such a way that a world without any order would be the result. To make advance, we would have to argue that the ‘reign of law’ constraint on possible worlds involves such a genuine order that some but not all combinations of substances are possible. And it may be that in the passage, where Leibniz says that “each possible world depends upon certain of God’s principal plans or ends”³¹ and which Russell uses as a textual evidence for his interpretation, something more than *just any general order* referred to in the passage from the “The Discourse on Metaphysics” is said to characterize all possible worlds³².

However, it is difficult to understand why such a strong conception of order should be applicable to all possible worlds. Why is it metaphysically necessary that there is this reign of law in all possible worlds so that some combinations of possible substances are ruled out from the space of possibilities? Why wouldn’t it be enough for Leibniz that a world is characterized by such a weak order alluded to in the passage cited by Brown? These are surely meaningful questions to pose to Leibniz. If he postulates constraints upon the logical space of possibilities, there should be some justification for the constraints. Any contingent constraints are, of course, out of the question, and Russell does say that the reign of law is metaphysically necessary³³. He suggests that the requirement is based upon the principle of sufficient reason, but it is difficult to see how this idea can be explicated. Some worlds are by nature such that God has more reason to create them than some other worlds; but why couldn’t there be worlds so bad or so chaotic that God has no reason whatsoever to create them?

3. Bridging the gap between non-relational and relational: What is it to create a *world*?

If the complete concepts of individual substances involve relational as well

30 DM VI; A VI, 4 B, 1537-1538 (GP IV, 431); Loemker, p. 306: “Ce qui est si vrai, que non seulement rien n’arrive dans le monde, qui soit absolument irregulier, mais on ne scauroit mêmes rien feindre de tel. Car supposons par exemple que quelcun fasse quantité de points sur le papier à tout hazard [...]. Je dis qu’il est possible de trouver une ligne geometrique dont la notion soit constante et uniforme suivant une certaine regle; en sorte que cette ligne passe par tous ces points, et dans le même ordre que la main les avoit marqués”.

31 GP II, 51; Mason, p. 57: “[...] chaque monde possible depend de quelques desseins principaux ou fins de Dieu”.

32 This kind of answer to Brown’s criticism is discussed in M. Wilson: “Compossibility and Law”, in: M. Wilson: *Ideas and Mechanism*, Princeton 1999, p. 449.

33 In this regard, D’Agostino’s term ‘synthetic interpretations’ is a bit unfortunate.

as non-relational predicates, there is an obvious answer to the question why the set of all possible substances is divided into possible worlds so that every possible substance belongs to only one possible world. If, on the other hand, complete concepts are fundamentally characterizable by monadic terms, then this straightforward explanation of the constitution of possible worlds becomes impossible, unless it is somehow possible to bridge the gap between the monadic, non-relational, level of description and the relational level of description.

Russell's solution to the problem of impossibility did suggest a way to understand impossibility without logical incompatibility between complete concepts. Russell's solution, however, has some rather serious problems. Russell abandons the following assumption about possible worlds:

(PW) – For any two possible substances, if there is no incompatibility between their complete concepts, then there is a possible world where they both exist.

Is it, then, possible to question (PW) without unjustifiable restrictions on possible worlds? If substances are logically independent of each other, what reason could there be to deny that there is a possible world where they both exist? Logical independence of C and C' means that the sentence

$$(5) \quad \exists x Cx \ \& \ \exists x C'x$$

does not imply contradiction. Thus, it seems to follow automatically that there is a possible world where (5) is true, i. e. a possible world where the individual substances determined by C and C' exist.

We think, however, that it is possible to develop one part of Russell's interpretation in a way that helps us to understand how the gap between the non-relational and the relational is bridged in Leibniz's philosophy. This interpretation helps to understand how Leibniz can at one level be an internalist concerning the individuation of substances (eat his relational cake as a metaphysician), and at the same time retain something upon which the relational facts needed for impossibility can be founded (keep his relational cake as a logician). What this requires is that we focus upon the concept of possible world. In Russell's interpretation, what made impossibility possible was something required of all possible *worlds*. Also, in our interpretation the concept of the *world* plays a central role. But unlike Russell, we are not going to introduce constraints from outside, as it were; we think that the constraints from which impossibility arises come from the concept of the world itself³⁴. Intuitively,

34 Donald Rutherford's interpretation seems to be based on this kind of idea too. He says: "A group of substances is compossible only if such substances can be conceived as coexisting within the same world, which is to say, only if they agree in their respective expressions of the universe" (D. Rutherford: *Leibniz and the Rational Order of Nature*, Cambridge 1995, p. 187). Rutherford's interpretation is criticized by Cover and O'Leary-Hawthorne (see note 17).

our answer to this is that there might be a reason to deny (PW) in the case that the two possible substances are ‘too far apart’, meaning that they are intrinsically such that they could not belong to the same world, or that they are such that *one world* could never encompass them both. In this way, it is possible to introduce a restriction into the construction of possible worlds which is not an arbitrary synthetic restriction but something that arises from the requirements built into the concept of the world. In the contemporary possible world semantics, the concept of the world does not have much content: if there are two mutually independent non-contradictory states of affairs, then it is always the case that there exists a possible world where they are both true. But it is possible to argue that for Leibniz the notion of the possible world was not without content to the same extent as in contemporary possible world semantics. In writing to Louis Bourguet, Leibniz clearly requires of a world or a universe, that it be connected:

“I do not agree that ‘in order to know if the romance of ‘Astrea’ is possible, it is necessary to know its connections with the rest of the universe’. It would indeed be necessary to know this if it is to be *compossible* with the universe, and as a consequence to know if this romance has taken place, is taking place, or will take place in some corner of the world, for surely there would be no place for it without such connections”³⁵.

Intuitively, of course, something strange is going on here. We are saying that the inner states of two possible substances can be such that they cannot belong to the same world. But how can it be that internal features of substances make them be ‘too far apart’? Internal features of substances can be responsible for their being much *different* from each other. But why should this be an obstacle to their existing in the same world?

In the context of Leibniz’s philosophy, however, it is not so strange to think that the intrinsic properties of substances determine even their external relations. One of the strands in Leibniz is that there are no ‘purely’ external relations between substances, but that all ‘purely extrinsic denominations’ must have foundations in the internal properties of substances. As Leibniz puts it, “no one becomes a widower in India by the death of his wife in Europe unless a real change occurs in him”³⁶. When we are considering the possibilities of co-existence between substances, as we are when we try to understand compossibility, we are considering one particular external relation: the relation of existing in the same world. Existence of several substances in the same world is intuitively a purely external denomination, but for Leibniz it must be based

35 GP III, 572; Loemker, p. 661: “Je n’accorde point *que pour connoistre, si le Roman de l’Astrée est possible, il faille connoistre sa connexion avec le reste de l’Univers. Cela seroit necessaire pour savoir, s’il est compossible avec luy, et par consequent, si ce Roman a été, ou est, ou sera dans quelque coin l’Univers. Car asseurement sans cela, il n’y aura point de place pour luy*”.

36 A VI, 4 B, 1503 (GP VII, 321-322); Loemker, p. 365: “[...] *nec quisquam viduus fit in India, uxore in Europa moriente, quin realis in eo contingat mutatio*”.

upon the inner states of things; without this foundation there could be no such external relation between the things in question. When we say that some possible substances are 'too far apart' we mean that they are such that there is no foundation in them for the relation required for co-existence. Sometimes Leibniz refers to the pre-established harmony as something that "relates each substance to all the others"³⁷, and this could be interpreted as saying that the pre-established harmony means that the monads of the universe are harmonious with each other, which is the same thing as that they are related to each other, i. e. belong to the same world. 'No purely external denomination'-doctrine means that it is not legitimate to understand the concept of the *world* in the way we are naturally inclined to do, as a sort of container where created substances can be put by God without any regard to their nature. We could also express this by saying that the *world-relatedness* and the *harmony between inner states* come to the same thing. One can see this doctrine at work also in places where Leibniz speaks about the 'situations' [situs] of the monads, e. g. in a letter to Des Bosses:

"For in themselves monads have no situation [situs] with respect to each other, that is, no real order which reaches beyond the order of phenomena. Each is as it were a separate world, and they correspond to each other through their own phenomena and not by any other intercourse and connection"³⁸.

More explicitly we are suggesting the following principle:

(PW') – For any two substances, there exists a possible world where they both belong if and only if their inner states are in proper harmony with each other.

By using the terminology Leibniz sometimes uses, (PW') can be formulated as follows:

(PW'') – For any two substances, there exists a possible world where they both belong, if and only if their inner states are such that they can be considered as two perspectives upon the same world.

We are suggesting, in fact, that it is possible to combine the world-boundedness of substances with the internality of individuation. In Hintikka's example, the substances are impossible because the complete concept of one of them involves the predicate 'being everybody's master' and the complete concept of the other involves the predicate 'being nobody's slave'. Now we are suggesting that it is enough that the inner states of the two substances involve, respectively, the *representations* or *perceptions* of being everybody's master

37 GP III, 403; Ariew/Garber, p. 195: "[l'Harmonie] qui fait le rapport de chaque substance à toutes les autres".

38 GP II, 444; Loemker, p. 602: "Monades enim per se ne situm quidem inter se habent, nempe realem, qui ultra phaenomenorum ordinem porrigatur. Unaqueque est velut separatus quidam mundus, et hi per phaenomena sua consentiunt inter se, nullo alio per se commercio nexuque".

and being nobody's slave.

The difference between our interpretation and that of Hintikka and others who have put forward an analytic interpretation is not great. First, we are not relying in our interpretation on any synthetic principle to restrict the range of possibilities: the restrictions, which produce the impossibility relations between substances, are based solely on the concept of the world. Second, we agree with the analytic interpretation in that if A and B are impossible substances, then there is no possible world where they both exist. The sentence

A and B exist in the same world

involves a contradiction also according to our interpretation. However, in our interpretation the concept of the world is indispensable in the derivation of the contradiction.

One could, however, claim that there is a difference between what the analytic interpretation sees as possible and what our interpretation does, because the world-boundedness of substances seems to be weaker in our interpretation than in the analytic ones. In the analytic interpretation the individual substances are world-bound in the sense that the instantiation of one substance implies logically the instantiation of its whole world. We have ruled out the possibility of co-existence of substances which are non-harmonious, i. e. if we take some possible substance, then only some (but not all) of the other possible substances *can* co-exist with it; but we have not said that these compossible substances *have to* exist with it. That seems to leave open the possibility that God creates only some of the inhabitants of some maximal possible world, perhaps even only one.

It is, however, possible to argue that for Leibniz all possible worlds are such that, in the words of Nicholas Rescher, "there is never any possibility of adding further possible substances to its content"³⁹. Rescher calls this feature the *existential saturatedness* of possible worlds, and he suggests that its basis "lies in the logico-conceptual nature of what a 'world' is all about"⁴⁰. This seems to be an idea which is similar to what we said above about the basis of impossibility: one has to consider what kind of entities can be *worlds*.

Sometimes Leibniz speaks about "a certain urge for existence" which exists in possible things⁴¹. This is not to be understood so that possible things could, as it were, on their own attain actuality, without God's creative work. God's free decree is necessary in order for there to be contingent things at all. But at

39 N. Rescher: "Leibniz on Possible Worlds", in: *Studia Leibnitiana* XXVIII/2 (1996), pp. 129-162, p. 134.

40 Ibid., p. 135.

41 GP VII, 303; Ariew/Garber, p. 150: "[In rebus possibilibus] esse exigentiam existentiae".

42 This is what Rescher (see note 39), p. 134 n. 11 suggests, too. The doctrine of 'striving possibles' is considered by D. Blumenfeld: "Leibniz's Theory of the Striving Possibles", in: Woolhouse (see note 1), pp. 77-88. He does not, however, consider the possibility of limiting the doctrine to the level of possibilities.

the level of possibilities this urge seems to be working⁴². Saturation of possible worlds is a process which occurs at the level of God's understanding so that when God thinks about one possible substance he is thereby given a reason to think about certain other substances, too. And because there is no reason not to think about these other substances together with the given one, he thereby thinks about them. God has no reason to think about one possible substance without at the same time thinking about the whole set of possible substances which are harmonious with it. So in God's mind the possible worlds are saturated, i. e. in logical space there are no non-saturated possible worlds. That this really is Leibniz's way of thinking about the realm of possibilities can be seen, for instance, from the following passage where possible substances are subsumed under the possible worlds.

"[...] I conceive that there was an infinite number of possible ways of creating the world according to the different plans that God could form, and that each possible world depends upon certain of God's principal plans or ends, [...] upon certain primary free decrees (conceived of as possible) or laws of the general order of that possible universe to which they are suited and whose concept they determine, as well as the concepts of all the individual substances which must enter into this same universe [...]"⁴³.

If we are right in our argument, then we have indeed bridged the gap between the inner states of monads and the relational predicates true of them which are needed for impossibility. And this bridging is done without compromising the internality of individuation. We could in this way get world-boundedness as strong as it is in the analytic interpretation, only the derivation of it starts further back as it were, and the motivation for this starting point is provided by the wish to retain the internality of individuation⁴⁴.

But our interpretation requires that all possible worlds are harmonious:

43 GP II, 51; Mason, pp. 56-57: "[...] je conçois qu'il y avoit une infinité de manieres possibles de créer le Monde selon les differens desseins que Dieu pouvoit former, et que chaque monde possible depend de quelques desseins principaux ou fins de Dieu, [...] de quelques decrets libres primitifs (conçus *sub ratione possibilitatis*) ou Loix de *l'ordre general* de cet Univers possible, auquel elles conviennent, et dont elles determinent la notion, aussi bien que les notions de toutes les substances individuelles qui doivent entrer dans ce même univers".

44 There are some places where Leibniz seems to say that it could be possible for God to create some possible substance without at the same time creating all those which are compossible with it. E. g. in his comments to Bayle's *Dictionary* article "Rorarius", Leibniz says that it is possible ('metaphysically possible') for God to "destroy everything external to the soul" (GP IV, 530; *Leibniz's 'New System' and Associated Contemporary Texts*, trans. and ed. by R. S. Woolhouse and R. Franks, Oxford 1997, p. 76: "[Il est vray que si] Dieu pouvoit se resoudre à detruire toutes les choses qui sont hors de l'ame"). We interpret such passages as saying (in terms of "The Discourse on Metaphysics") that considered per se the complete concepts are such that the instantiation of one does not necessitate the instantiation of certain others; but still it is the case that to create a world where some complete concept is instantiated, it is necessary to instantiate in this world certain other complete concepts also (the compossible ones).

without harmony there is no being in the same world. Does not Leibniz accept the possibility of non-harmonious worlds? In the following passage, Leibniz seems to deny the necessity of harmony between created substances:

“God could give to each substance its own phenomena independent of those of others, but in this way he would have made as many worlds without connection, so to speak, as there are substances [...]”⁴⁵.

Even though this passage appears to provide evidence against our interpretation, it, in fact, is evidence *for* it. In the passage, Leibniz clearly assumes that there has to be a connection between substances which exist in the same world. As to the fact that Leibniz says here that God *could* have created substances whose phenomena are not harmonious with each other, it is rather doubtful that Leibniz means this as a real possibility. For if it is a real possibility, then the hypothesis of many worlds would not be absurd. But at other places Leibniz clearly considers the possibility of many worlds unconnected with each other in a very radical way as absurd⁴⁶.

The kind of harmony which, according to our interpretation, characterizes every possible world could also be seen to follow from the nature of God’s understanding. In thinking about the possible worlds, it is not only the principle of contradiction which restricts the ways the world could be for God. Let us look at the following quotation from “The Principles of Nature and Grace”:

“For everything has been regulated in things, once for all, with as much order and agreement as possible; the supreme wisdom and goodness cannot act except with perfect harmony. The present is great with the future; the future could be read in the past; the distant is expressed in the near. One could learn the beauty of the universe in each soul if one could unravel all that is rolled up in it but that develops perceptibly only with time”⁴⁷.

One could see this as describing only the most perfect of the possible worlds. But it is also natural to extend the applicability of the principle of harmony in some sense to cover all possible worlds. We could say that as well as it is true that ‘the supreme wisdom and goodness cannot act except with perfect harmony’ it is also true that the acts of thinking of the supreme wisdom are characterized by harmony. Thus, the alternative possible worlds from which God chooses the most perfect do not include *everything* which it is possible to think without contradiction. There are indeed places where Leibniz speaks of *all* possible worlds and seems to ascribe to them some kind of harmony. For

45 GP IV, 519; Loemker, p. 493: “Dieu pouvoit donner à chaque substance ses phenomenes independans de ceux des autres, mais de cette maniere il auroit fait, pour ainsi dire, autant de mondes sans connexion, qu’il y a de substances [...]”.

46 See the example of ‘Astrea’ in GP III, 572; Loemker, p. 661.

47 “Principes de la nature et de la grace” § 13; GP VI, 604; Loemker, p. 640: “Car tout est réglé dans les choses une fois pour toutes avec autant d’ordre et de correspondance qu’il est possible, la supreme Sagesse et Bonté ne pouvant agir qu’avec une parfaite harmonie: le present est gros de l’avenir, le future se pouvoit lire dans le passé, l’eloigné est exprimé dans le prochain. On pourroit connoitre la beauté de l’univers dans chaque ame, si l’on pouvoit deployer tous ses replis, qui ne se developpent sensiblement qu’avec le temps”.

example, in the *Theodicy* Leibniz writes:

“For it must be known that all things are *connected* in each one of the possible worlds: the universe, whatever it may be, is all of one piece, like an ocean: the least movement extends its effect there to any distance whatsoever [...]”⁴⁸.

Of course, it is still possible to say that in any possible world, there is that amount of harmony which is required for all its constituent substances to belong to the same world, and also that in the actual, i. e. the best, world there is more harmony than in any of the others. More than minimal harmony could mean, for example, simpler laws of nature. Alternatively we could say that Leibniz uses the concept of harmony in at least two senses: there is the harmony which obtains necessarily between any two substances in the same world, and there is the harmony which belongs, in different degrees, to whole worlds. As is evident from what we have said we maintain that any world whose substances are connected to each other must have some degree of harmony. Now this may seem problematic because it seems that connectedness does not entail even the appearance of causal interaction between substances. However, our suggestion involves that harmony comes in degrees. A world which appears causally determined is characterized by a greater harmony than a world whose substances are non-causally connected through their complete concepts.

4. Conclusion: Why didn't God create many worlds?

We have seen how it is possible for Leibniz to exclude the possibility of one great possible world with all possible substances in it. Such an aggregate would not be a world at all. The strange idea of a multi-world reality, ‘plurality of worlds’⁴⁹, is, however, still looming large. We could assume that God gives existence to every possible substance and that this leads to the creation, not of one world but of many disconnected universes. Why should God exhaust his creative power by realizing only one world? Having created one world, why couldn't he, as it were, turn his mind into new directions altogether, and start creating another world? This further creation would have nothing to do with the first world, but why should this be a hindrance to the creative activity of God? How is Leibniz going to eliminate this possibility? In an early text, Leibniz argues for the absurdity of this idea as follows:

“To introduce another kind of existing things, and another world, so to speak, which is also infinite, is to abuse the word ‘existence’, for we cannot say whether or not these things exist

48 *Théodicée* § 9; GP VI, 107; A. Farrer/E. M. Huggard (eds.): *Theodicy*, La Salle 1997, p. 128: “Car il faut savoir que tout est *lié* dans chacun des Mondes possibles: l'Univers, quel qu'il puisse être, est tout d'une pièce, comme un Ocean; le moindre mouvement y étend son effect à quelque distance que ce soit [...]”.

49 See D. Lewis: *On the Plurality of Worlds*, Oxford 1986.

50 A VI, 3, 581 (C, 529); Loemker, p. 168: “Introducere aliud genus rerum existentium, aliumque velut Mundum etiam infinitum. Est abuti existentiae nomine, neque enim dici potest an nunc existant illae res an non. Existentia autem ut a nobis concipitur involvit aliquod tempus determinatum [...]”.

now. But existence as it is conceived by us involves some determinate time [...]”⁵⁰.

This won't really do for Leibniz, however, because he still wants to say that God exists, and that God does not exist in time. If this kind of use of the word 'existence' is legitimate, it is difficult to see why it would not be legitimate to use it in the case of two disconnected worlds. In a passage in a letter to Bourguet where he considers the sense in which it might be said that the romance of 'Astrea' is possible⁵¹, Leibniz says that for it to be compossible with the actual universe it must have 'connections with the rest of the universe', and that it is necessary that 'this romance has taken place, is taking place, or will take place in some corner of the world'. Without such connections 'there would be no place for it'. This is just what Leibniz should say according to our interpretation, but if one has the problem of many worlds in mind, then this is a bit disappointing: why couldn't there be a place for the romance of 'Astrea' in some other spatio-temporal framework altogether, disconnected from our actual world, but still real? Why should reality or existence be confined inside one world only? If this is a metaphysical possibility, Leibniz's God, who is perfect and creates as much being as possible, should realize it.

In contrast to the problem of roots of impossibility, Leibniz did not take the problem of many worlds seriously. It was enough for him to show that not all possible substances can belong to the same possible world; the theory of creation tells us then that God chooses from the many possible worlds *one*. Leibniz clearly regards as absurd the suggestion that God could choose more than one world and give existence to them all. But why? It seems, that it must be concluded that although Leibniz has an answer to the problem of impossibility in the case of individual substances, i. e. it is possible to explain why all possible substances cannot exist in the same *world*, he does not have an answer to the problem of impossibility in the case of possible worlds, i. e. there is no answer to the question why the creation of one possible world should make it impossible to create other possible worlds⁵².

Dr. Olli Koistinen, Arto Repo, Department of Philosophy, 20014 University of Turku, Finland, Olli.Koistinen@utu.fi, arto.repo@utu.fi

51 See GP III 572; Loemker, p. 661 (confer note 35).

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